

PRELIMINARY REVIEW COMMENTS  
BY GIDLAB ON MALCOLM PIRNIE  
P.C.B. STUDY REPORT OF JUNE 1981

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*All comments following are referenced  
to pages in the Pirnie Report.*

2-2 Cites Primary Association of P.C.B. with clay (fine-grained particles)

While GIDLAB agrees that P.C.B. and heavy metals are associated with so-called clay particles, GIDLAB believes that the presence of organic matter either alone or in combination with so-called clay is a major determinant for P.C.B. presence in sediments and in the sediment-water column. This has been reported in various GIDLAB studies and also similar studies by others (Sawhney, Frink, Glowa P.C.B.s in the Housatonic; Weber, UNH; Shimizu, URI; Lee, Colorado State; Stuart, Chemistry Department, U.Conn.; Zimmie, RPI)

S-2 Extent of P.C.B. contamination in the concerned area referenced to W.H.O.I. 1977 New Bedford Harbor Study—(among others). This might lead a reader to assume that the W.H.O.I. study evaluated P.C.B. in sediments. It should be emphasized that this excellent study did not test for P.C.B. in any harbor sediment cores.

2-3 Cites Affinity of P.C.B. for Fine-Grained Sediments

The reader is referred to GIDLAB comment on page 2-2; in which GIDLAB stresses the importance of organic matter: hydrocarbons, sewage, podzols, peat (see GIDLAB cores near New Bedford Bridge), oil grease, etc.

2-8 Cites Biological Transport

GIDLAB does not believe that the biological transport of P.C.B. and metals in the Acushnet River can be compared with the Hudson River.

Some of the major differences may be tabulated:

1. The concerned Hudson River is a 40-mile segment above Troy. The total Acushnet concerned segment is about 5 miles.
2. The Hudson segment is 160 miles above the ocean. The Acushnet segment is on the ocean.

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2-8 Cites Biological Transport (continued)

3. The Hudson hydraulic gradient concerned area is from elevation 120' to 10', whereas the Acushnet River gradient is one-tenth of this.
4. 15,000 mg/liter salinity extends up the Acushnet River, whereas the 50 mg/liter salinity on the Hudson extends only to Poughkeepsie, New York.
5. The velocity, water volumes and erosion (scour effects) of the Hudson are tremendous, whereas the Acushnet River factors are negligible.

GIDLAB believes that, in any case, biological transport of P.C.B. in the concerned area is of minuscule importance or relevance compared to physio-chemical movement in the total sediment-water column (cf. GIDLAB to Summerhayes, W.H.O.I., June 25, 1976, on contaminants transport seaward from New Bedford Harbor).

2-8 Ambient Air Data

The cited ambient air data of P.C.B., presumably from the New Bedford Landfill (so-called 1977 Florida Study) is of little environmental value because of (1) very short test periods, (2) test locations selected, and (3) no measurements made of P.C.B. air fallout (micrograms per square meter).

Air fallout (P.C.B. and metals) over considerable time periods (one month to two or more years) has been studied by GIDLAB in several area projects (1976-1981): New Bedford Municipal Landfill and Paskamansett River System, Nasketucket River and Distant-Early-Warning System, Mattapoissett River System, Fairhaven Landfill (2 orders of magnitude increase of P.C.B. following deposit of dredged material from the harbor). This air fallout data can be compared with other air fallout studies by GIDLAB in New Hampshire, Connecticut and Plymouth County (Massachusetts) and also the valuable data of Dr. Ian Nisbet, Massachusetts Audubon Society in the Buzzards Bay Area and elsewhere.

2-9 Surface Water Data

Pirnie reports "very little water quality sampling" of P.C.B. in the New Bedford area. This is incorrect. GIDLAB has tested hundreds of surface water samples for P.C.B. in dozens of locations in the New Bedford area (New Bedford, Dartmouth, Fairhaven, Rochester, Mattapoissett, Lakeville, Westport, etc.). The reader is referred to three major GIDLAB studies in Appendix A (List of References).

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2-9 Surface Water Data (continued)

GIDLAB data on P.C.B. and metals in both surface and groundwater is based not only on conventional grab samples but on continuous cumulate Sensors (EMI and MULTOX)—reported to NAWDEX (of which GIDLAB has been a long-time member).

2-11 New Bedford Landfill Study (Florida)

The reader is referred to GIDLAB's much more comprehensive study (1979-1981) of the possible effects of this landfill on the Paskamansett River System (See Appendix A—List of References).

3-1 Fishery Impacts

Pirnie reports "the closure (M.D.P.H. 1979) has affected" fishery. This closure is a myth—at it was never enforced by the Division of Marine Fisheries, in spite of the fact that extensive lobstering was obvious to all marine personnel.

4-3 Containment Sites

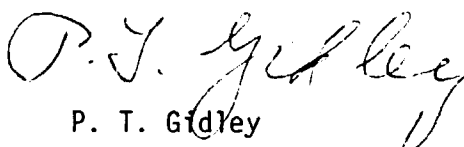
Criteria and containment sites (disposal and treatment areas) for contaminated dredging were established by GIDLAB in various studies (Harbor Development Committee 1972, Dredging Spoils Criteria 1974, GIDLAB Pollution Report for SRPEDD 1977, Phoenix Project 1978 and others).

Sampling Program (Thomas to Szal, April 22, 1981)

1. GIDLAB emphasizes Pirnie condition that all P.C.B. isomers be tested is very important, as previous testing by the State for Arochlor 1254 only seriously underestimated the problem.
2. GIDLAB has previously commented on the inadequate testing protocols used for testing P.C.B. in sediments (Gidley to Farrington, W.H.O.I.—1980—See Appendix A).

September 14, 1981

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P. T. Gidley

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## APPENDIX A

### REFERENCES CITATIONS:

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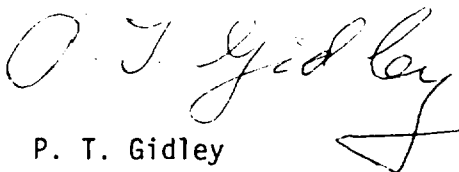
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September 15, 1981

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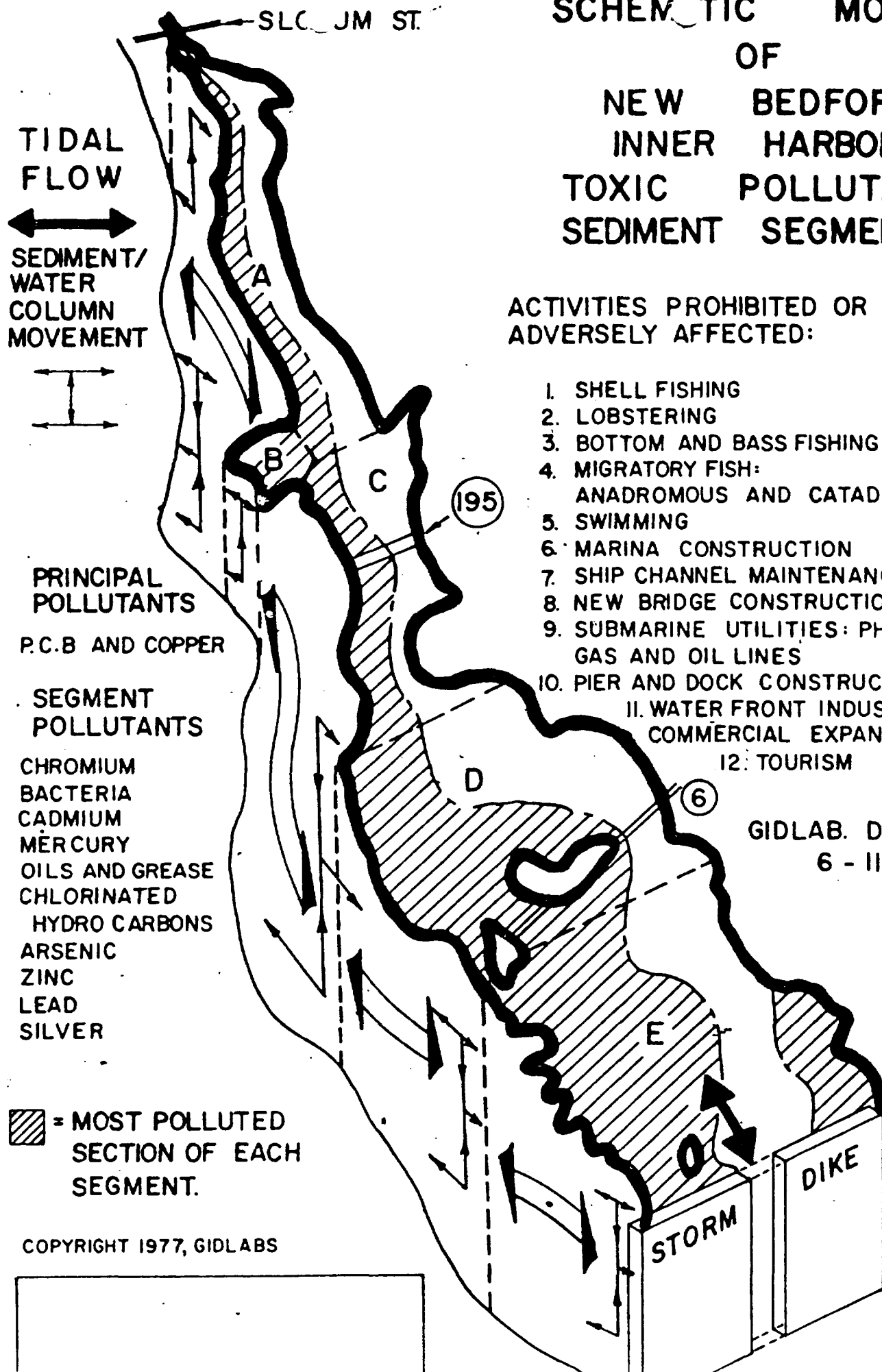
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# SCHEMATIC MODEL OF NEW BEDFORD INNER HARBOR TOXIC POLLUTANT SEDIMENT SEGMENTS

ACTIVITIES PROHIBITED OR  
ADVERSELY AFFECTED:

1. SHELL FISHING
2. LOBSTERING
3. BOTTOM AND BASS FISHING
4. MIGRATORY FISH:  
ANADROMOUS AND CATADROMOUS
5. SWIMMING
6. MARINA CONSTRUCTION
7. SHIP CHANNEL MAINTENANCE
8. NEW BRIDGE CONSTRUCTION
9. SUBMARINE UTILITIES: PHONE, ELECTRIC  
GAS AND OIL LINES
10. PIER AND DOCK CONSTRUCTION
11. WATER FRONT INDUSTRIAL AND  
COMMERCIAL EXPANSION
12. TOURISM

GIDLAB. DWG. NP-2  
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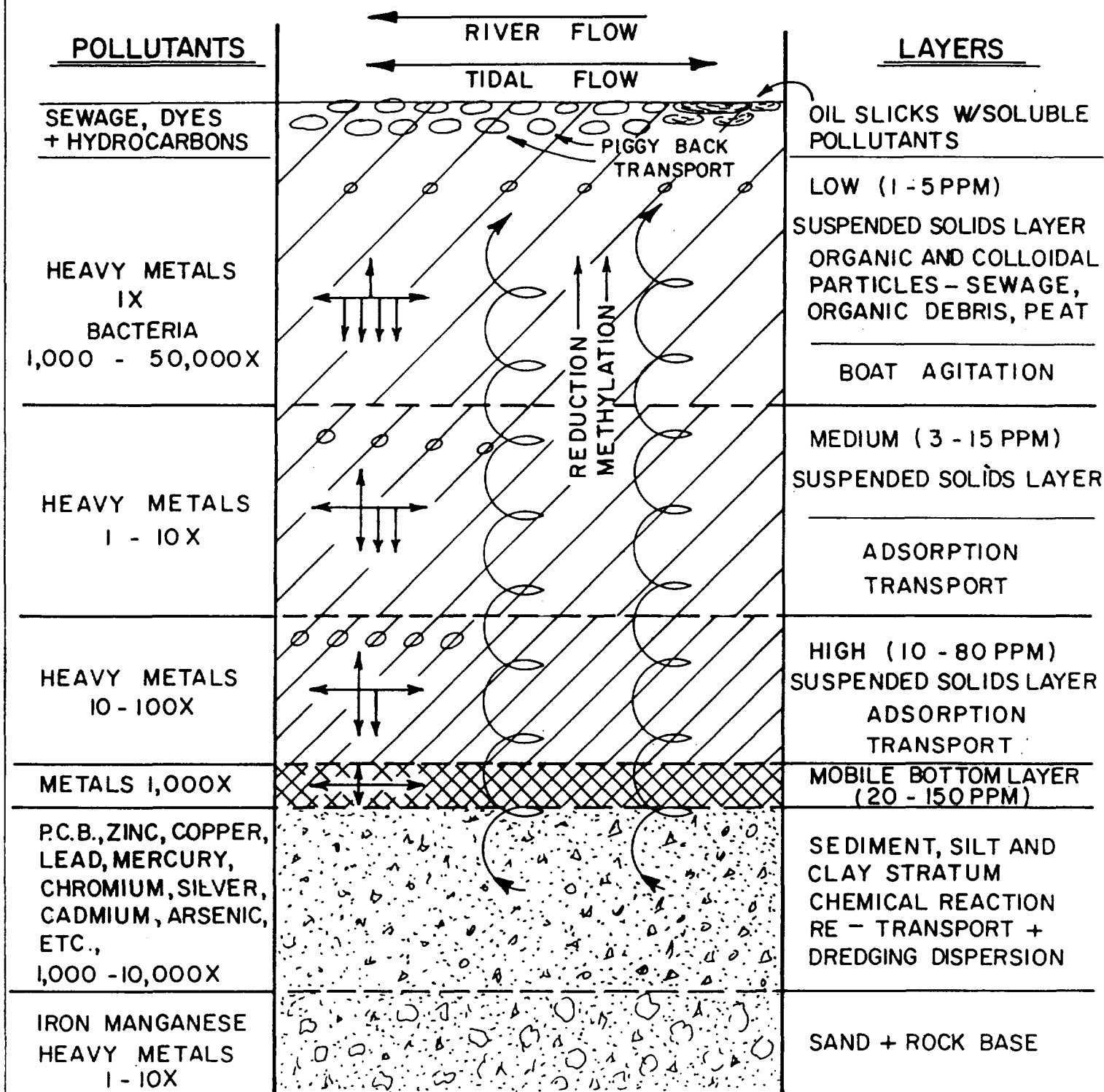
# WATER AND SEDIMENT COLUMN — SCHEMATIC

## FOR RIVERS, HARBORS AND ESTUARIES

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**NOTE:**

SEE TEXT ON "VERTICAL POLLUTION IN WATER COLUMNS" AND "METALS TRANSPORT SEAWARD" ALSO MODEL DWG. OF NEW BEDFORD HARBOR SEGMENTS.

